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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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THOMPSON HINE L.L.P. Intellectual Property Group P.O. BOX 8801 DAYTON, OH 45401-8801				
EXAMINER				
KHARE, ATUL P				
ART UNIT		PAPER NUMBER		
1791				
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05/05/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/506,723

Applicant(s)

SEVIGNY ET AL.

Examiner

ATUL KHARE

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 23-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The declaration filed on 19 January 2010 under 37 CFR 1.131 has been considered but is ineffective to overcome the Roy et al. (WO 01/16589) reference.
2. The evidence submitted is insufficient to establish a reduction to practice of the invention in this country or a NAFTA or WTO member country prior to the effective date of the Roy reference. The declaration fails to specify the country in which a reduction to practice was established.
3. It is noted by the Examiner that the drawings (see Declaration p. 5-10) indicate that applicant's invention was manufactured or designed by an inventor (Dominique Roy) for a client (FMC Bioproducts), and that the relevant dates have been removed. If a sale to a client was made, the nature of the sale, the date of the agreement and offer for sale, and the product sold, would likely be material to patentability.
4. It is noted by the Examiner that there appear to be multiple clients listed in the Declaration (p. 10). If FMC or GenID participated in the conception or reduction to practice of the instant invention, this information may also be material to patentability or to inventorship.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: the subject matter of claim 13 should be added to the specification/drawings. The subject matter of claim 16 requiring performing heating during heating time periods for different zones should be added to the specification.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 15 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claim 15 recites the limitation "the sheet material" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim. For examination, "the sheet material" will be interpreted as "the thermoforming material".
9. The term "minimal" in claim 21 is a relative term which renders the claim indefinite. The term "minimal" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For examination, any amount of material left outside the mold will be considered to be minimal.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 12-15, 18, 19, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bambeck et al. (US 4,909,918) in view of Marshall (US 4,822,553).

14. As to claims 12, 14, 15, 18, and 19, Bambeck teaches using a thermoformed, resilient polystyrene material for making a comb for an electrophoresis device (abstract, column 4 lines 10-19). The comb includes transversely extending ribs or ridges 42

which constitute holes or reservoirs present/facing a peripheral portion of the cassette (figure 6, column 3 line 60 to column 4 line 1).

Bambeck does not appear to explicitly disclose the specifics of the thermoforming process. However, Marshall teaches in a method for thermoforming a plastic article: preheating a thermoplastic sheet made from polyethylene or polystyrene (column 4 lines 25-30), feeding the heated sheet into a thermoforming mold having upper and lower mold sections (column 4 lines 31-34), forcing the sheet into a forming cavity formed in the upper mold section (column 4 lines 46-50), imparting a vacuum pressure to the sheet using a vacuum outlet connected to vacuum holes provided in the upper mold to form a recessed portion of the article (column 4 line 58 to column 5 line 4), and cooling the formed sheet material using a plurality of cooling passageways for circulating a cooling fluid around the forming surfaces of the die to increase the rate at which the heated article hardens (column 5 lines 4-8). The cooling fluid is implicitly pre-cooled prior to being provided into the cooling passageways. Both the stretching step and the cooling parameters provide a uniformly distributed material surface (figures 2, 3a). Applying the Marshall thermoforming method for creating the Bambeck electrophoresis comb would create the required holes in a peripheral portion of the cassette. It would have been obvious to use the thermoforming process of Marshall as a conventional thermoforming method for creating the electrophoresis device of Bambeck in view of Bambeck's suggestion to perform thermoforming.

15. As to claim 13, the Marshall mold includes an upper female mold section 32 that includes a cavity 46 (figure 1). The cavity constitutes a groove provided in a face of the

upper mold frame, with an inner surface that constitutes a groove rear surface against which the article is formed. A space is disposed between the front outline and rear inside border of the upper mold cavity to allow the sheet material to stretch and conform to the cavity surface during thermoforming (see figures 1, 3a).

16. As to claim 21, the Marshall molding method leaves a minimal amount of material around the mold, which implicitly minimizes heat propagation as required by the claim (figure 3a).

17. As to claim 22, the Marshall molding method includes a step of forcing a lower mold portion 36 into the heated sheet (column 4 lines 44-54). This forcing step constitutes punching as required by the claim.

18. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bambeck et al. (US 4,909,918) in view of Marshall (US 4,822,553) as applied to claims 12-15, 18, 19, 21, and 22 above, and further in view of Robache (US 6,282,870) and Gunn (US 4,619,806). As to claims 16 and 17, modified Bambeck does not appear to explicitly disclose radiating heat from the mold or dividing the mold into a plurality of different heating zones. However, Robache teaches in a thermoforming process: heating a film during a thermoforming process by placing it between two thermally regulated plates which can be maintained at different temperatures (column 3 lines 7-17). Heat is thus radiated from the plates as required by the claims. Each plate can constitute a divided zone of the molding apparatus corresponding, for example, to male and female mold sections. Additionally, Gunn teaches in a method for forming

thermoplastic articles: differentially heating different zones of a thermoplastic sheet material so that an outer cooled zone maintains tension control of the sheet during the forming process (abstract, column 6 line 55 to column 7 line 6). It would have been obvious to apply the differential heating plates of Robache as an improvement to the modified Bambeck method to provide further control to the temperature of the sheet during thermoforming. It would have been obvious to apply the differential heating zones of Gunn as an improvement to the modified Bambeck method to provide tension control of the sheet during the forming process.

19. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bambeck et al. (US 4,909,918) in view of Marshall (US 4,822,553) as applied to claims 12-15, 18, 19, 21, and 22 above, and further in view of Kartman (US 3,932,096) and Gunn (US 4,619,806). As to claim 20, modified Bambeck does not appear to explicitly disclose cooling at a different speed in different cooling zones. However, Kartman teaches in a mold for thermoforming thermoplastic sheet material: controlling the cooling rate of a mold by controlling the rate of coolant fluid flowing through upper and lower molding blocks of the mold (column 5 lines 29-51). Kartman further teaches the need for a temperature differential between molding surfaces (divided zones) 18 and 28 of the die cavity. A person having ordinary skill in the art would recognize that rate of coolant flow influences mold temperature, making it a result effective variable. Because it is a result effective variable and Kartman teaches its use, it would have been obvious to optimize rate of coolant flow to attain the desired temperature differential between the

upper and lower mold sections. The Kartman method therefore meets the required limitations of controlling cooling rate and having a mold divided into a plurality of zones (upper and lower mold sections). In the alternative that Kartman does not teach the required mold divided into a plurality of zones: Gunn teaches in a method for forming thermoplastic articles: differentially heating different zones of a thermoplastic sheet material so that an outer cooled zone maintains tension control of the sheet during the forming process (abstract, column 6 line 55 to column 7 line 6). It would have been obvious to apply the step of controlling the rate of coolant flow through the upper and lower mold sections as taught by Kartman as an improvement to help control the molding temperature of modified Bambeck. It would have been obvious to apply the differential heating zones of Gunn as an improvement to the modified Bambeck method to provide tension control of the sheet during the forming process.

Response to Arguments

20. Applicant's arguments, see Remarks p. 7, filed 19 January 2010, with respect to the rejection(s) of claim(s) 12-22 under 35 U.S.C. 103(a) have been fully considered and are persuasive because the Roy reference does not qualify as prior art (since the reference has the same inventive entity as the instant application, rather than because it has been overcome by the declaration filed under 37 CFR 1.132). Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Bambeck et al. (US 4,909,918), Marshall (US 4,822,553), and Gunn (US 4,619,806).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATUL KHARE whose telephone number is (571)270-7608. The examiner can normally be reached on Monday-Thursday 7:30 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ATUL KHARE/
Examiner, Art Unit 1791

/Matthew J. Daniels/
Primary Examiner, Art Unit 1791
5/4/10